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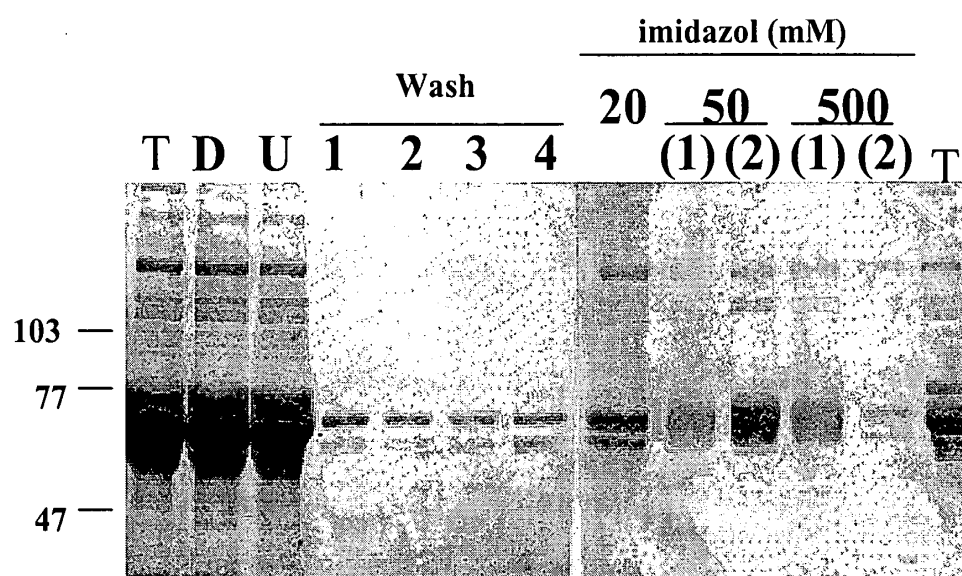
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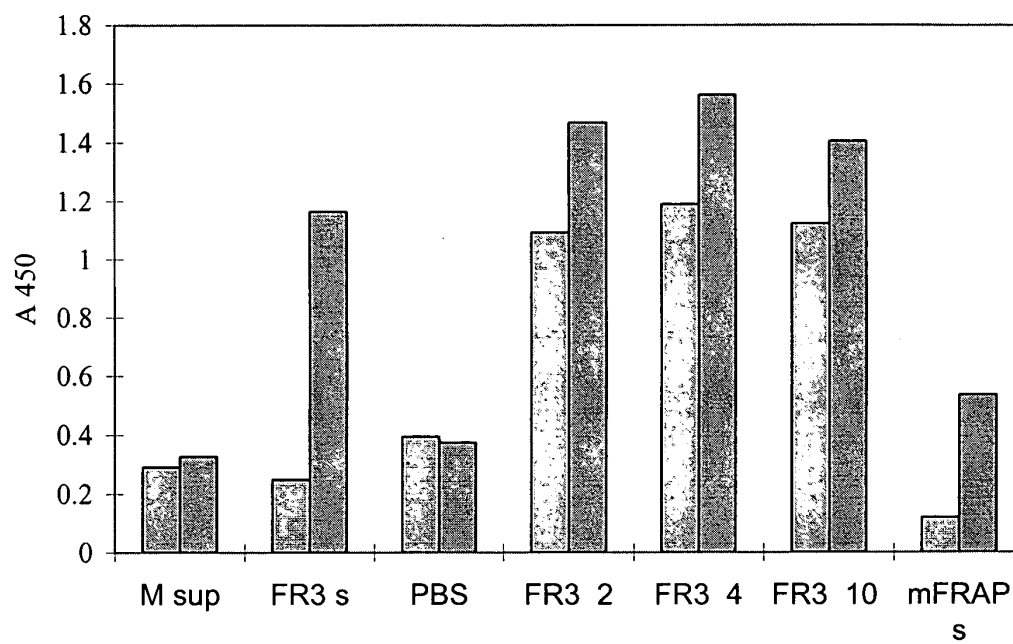
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**Figure 1**



**Figure 2**



**Figure 3**

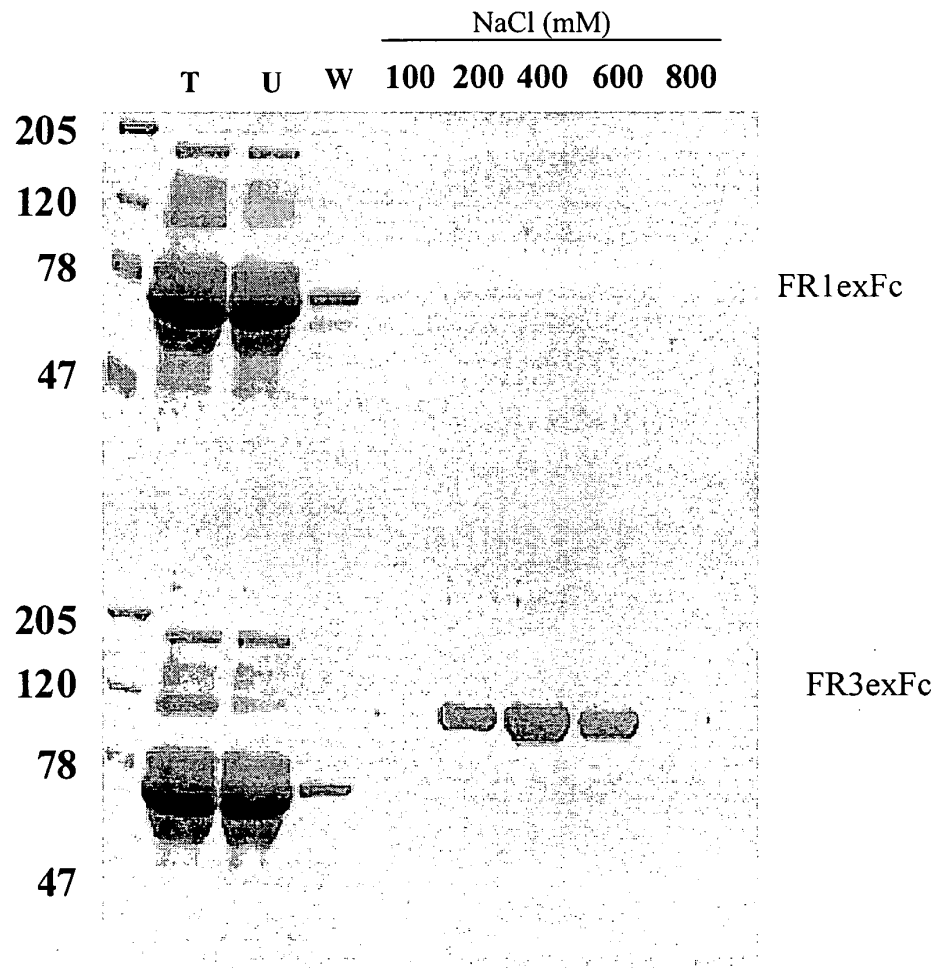


Figure 4

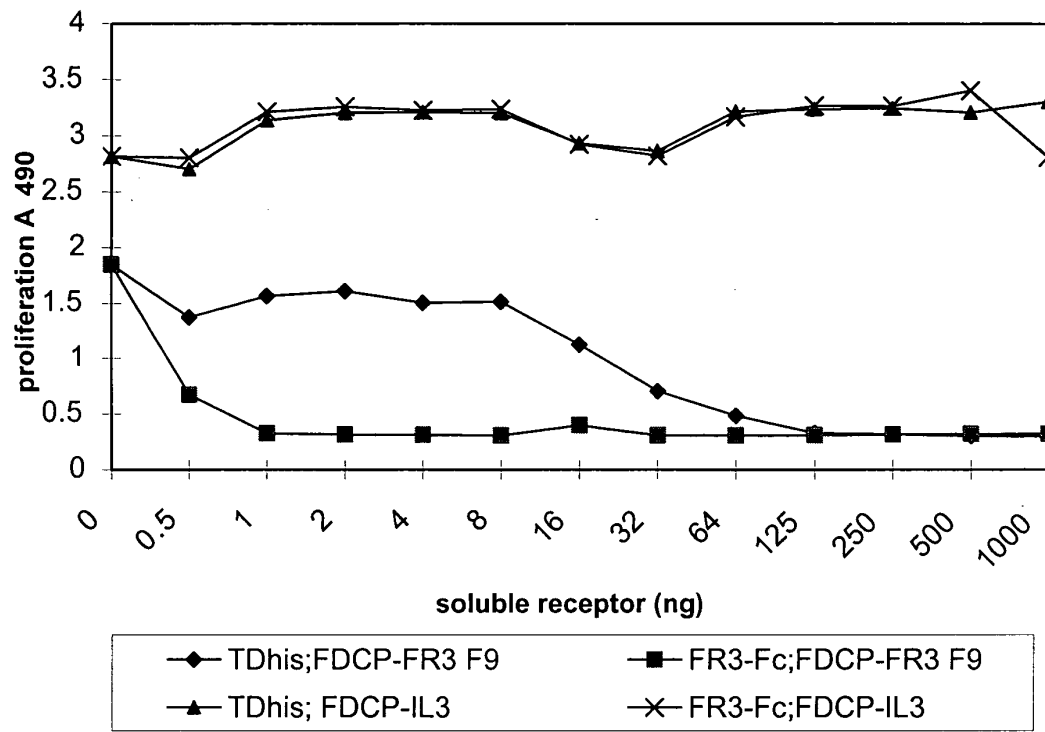


Figure 5

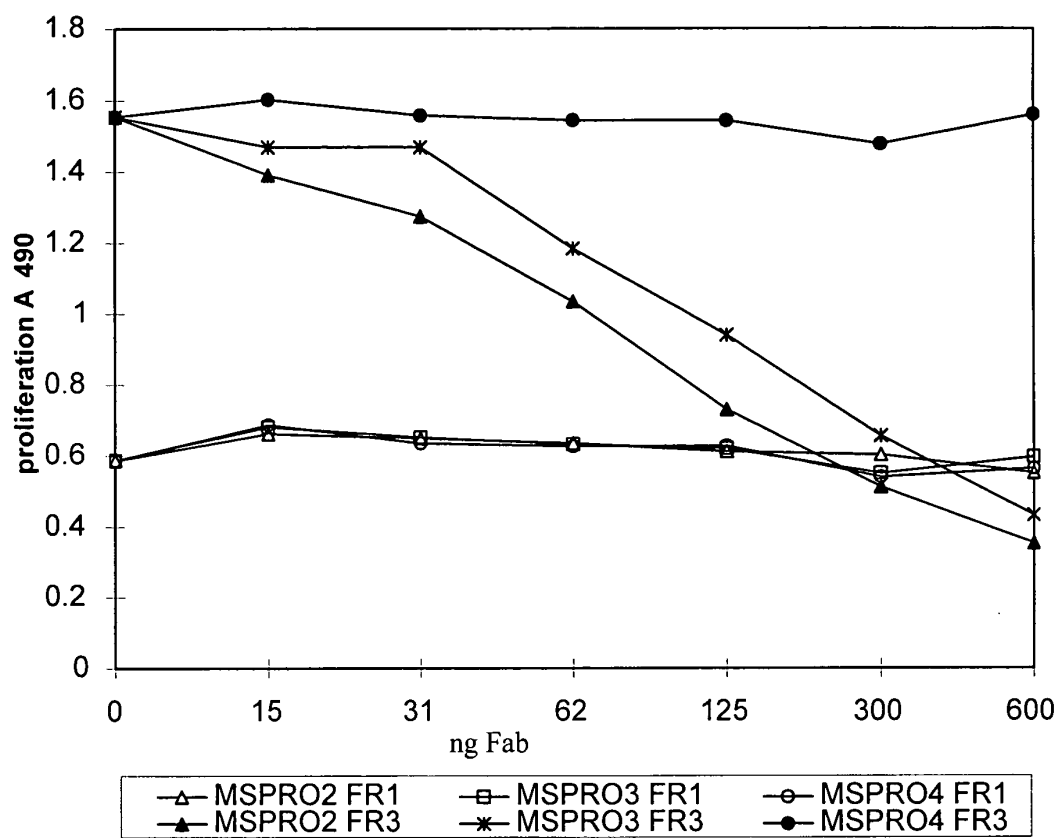


Figure 6

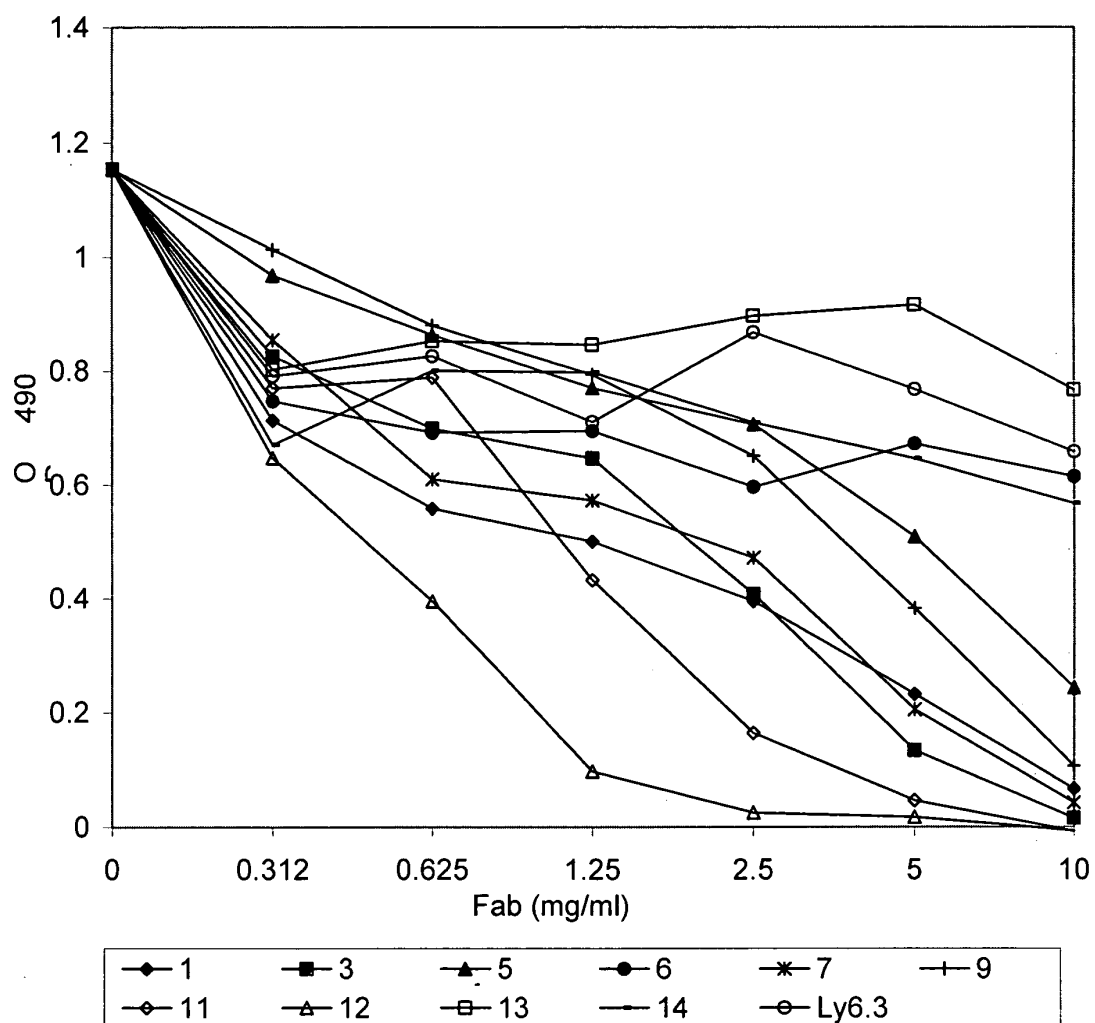


Figure 7A

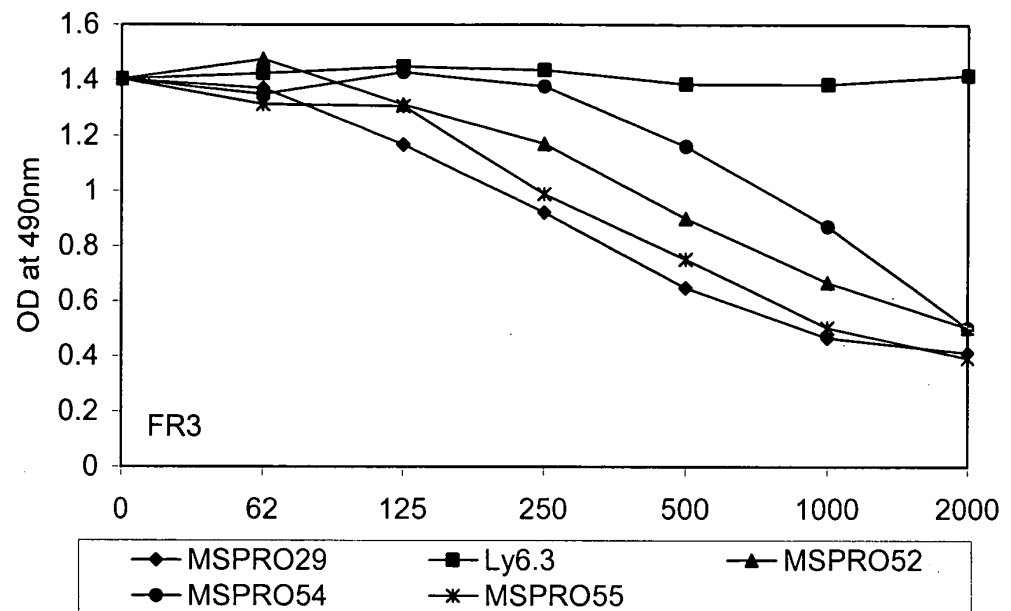


Figure 7B

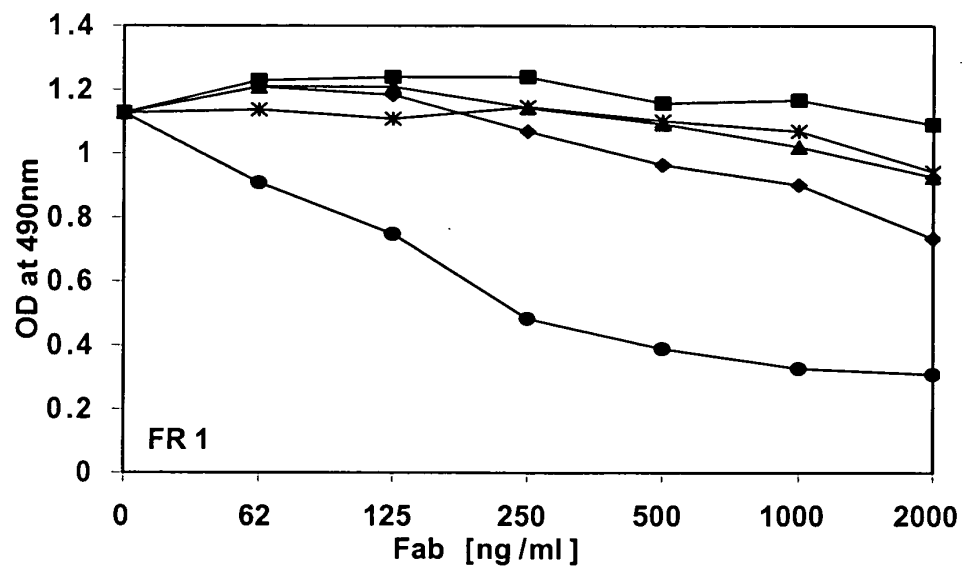


Figure 8A

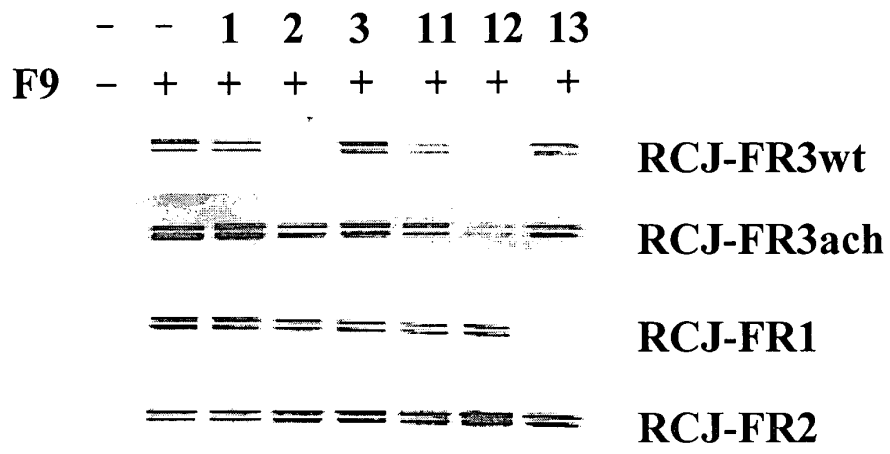


Figure 8B

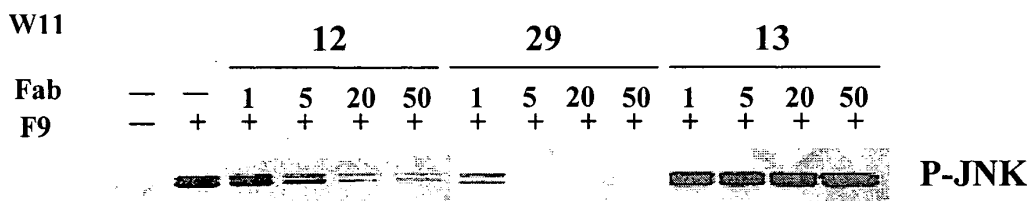


FIGURE 9A

M14


MSPRO (μg)	<u>LY6.3</u>				<u>29</u>				<u>59</u>				<u>54</u>			
	20	10	5	1	20	10	5	1	20	10	5	1	20	10	5	1
F9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
																

FIGURE 9B

W11


MSPRO (μg)	<u>LY6.3</u>				<u>29</u>				<u>59</u>				<u>54</u>			
	20	10	5	1	20	10	5	1	20	10	5	1	20	10	5	1
F9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
																

FIGURE 9C

R1-1



MSPRO (μg)	<u>LY6.3</u>				<u>29</u>				<u>59</u>				<u>54</u>			
	20	10	5	1	20	10	5	1	20	10	5	1	20	10	5	1
F9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
																

FIGURE 9D

R2-2

MSPRO (μg)	<u>LY6.3</u>				<u>29</u>				<u>59</u>				<u>54</u>			
	20	10	5	1	20	10	5	1	20	10	5	1	20	10	5	1
F9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
																

**Figure 10**

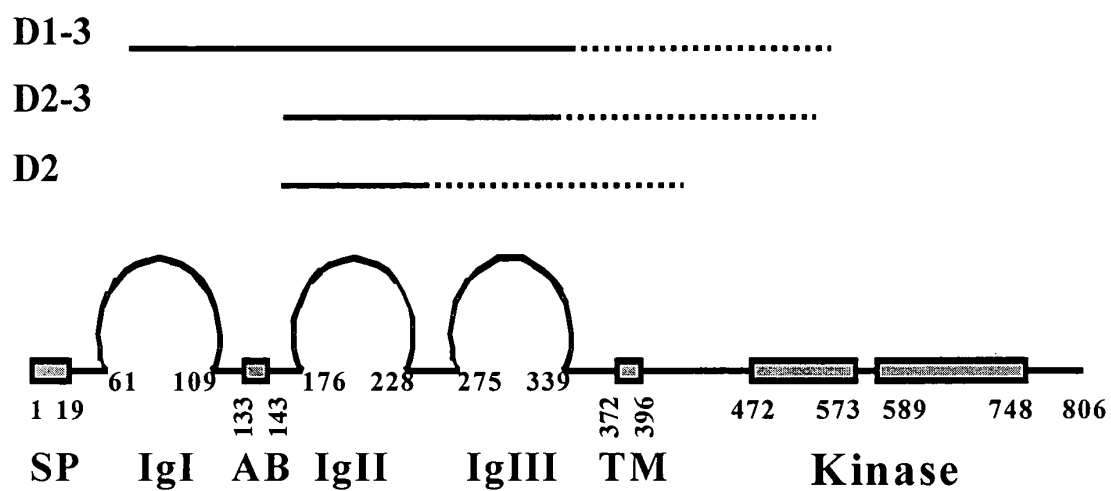


Figure 11

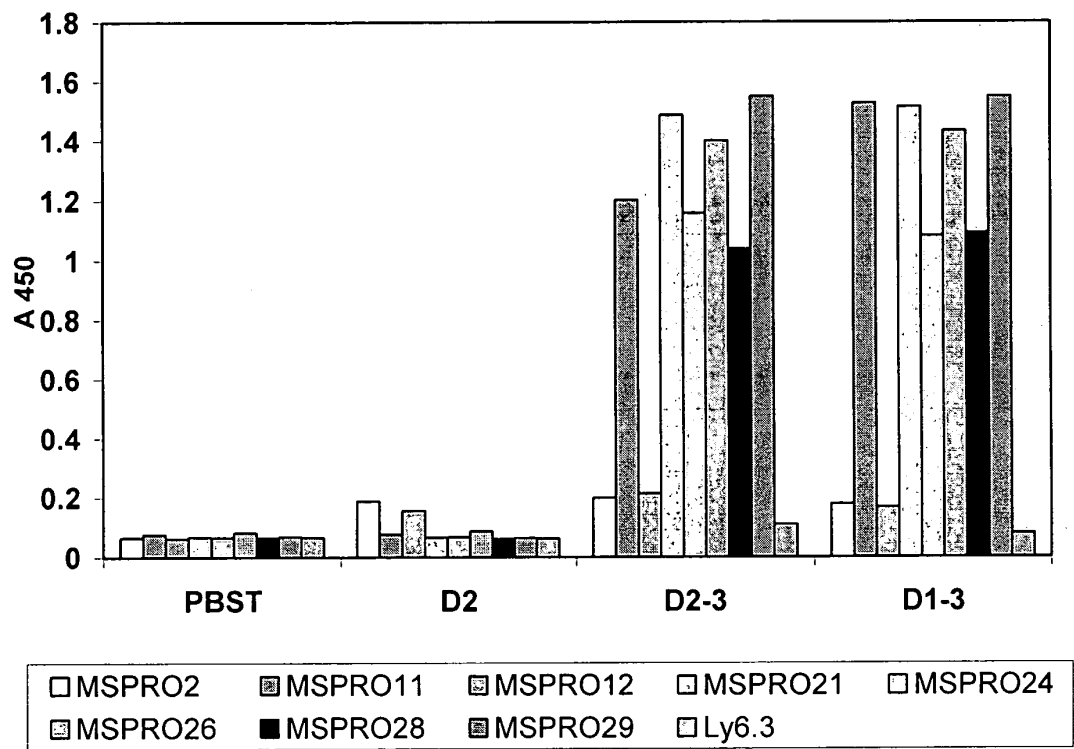


Figure 12

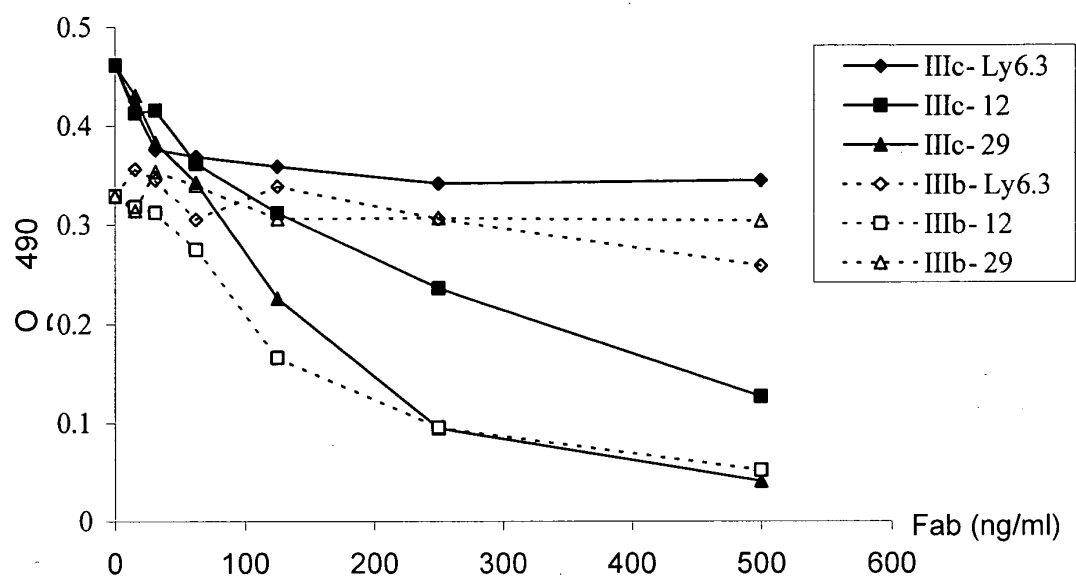
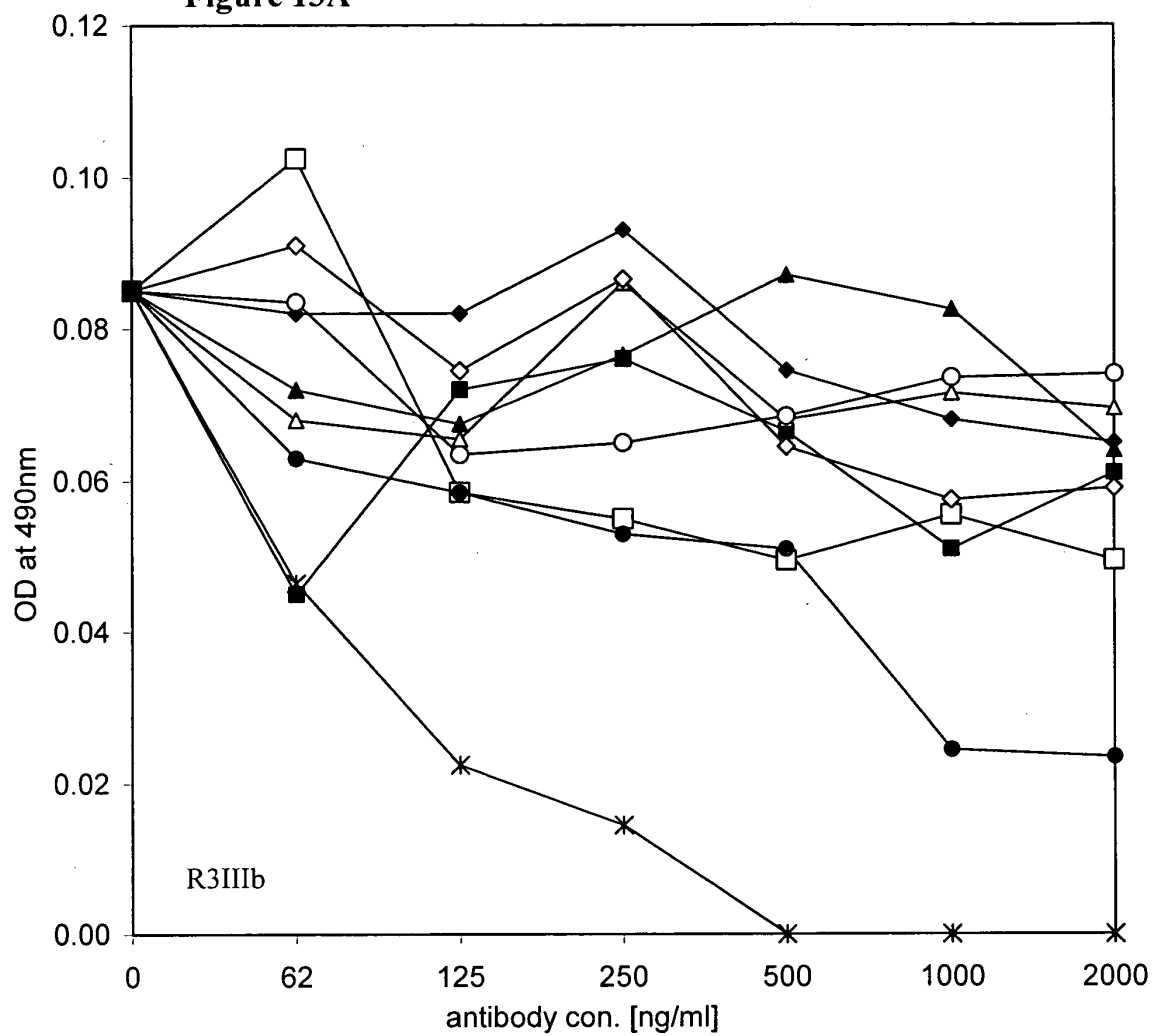


Figure 13A



**Figure 13B**

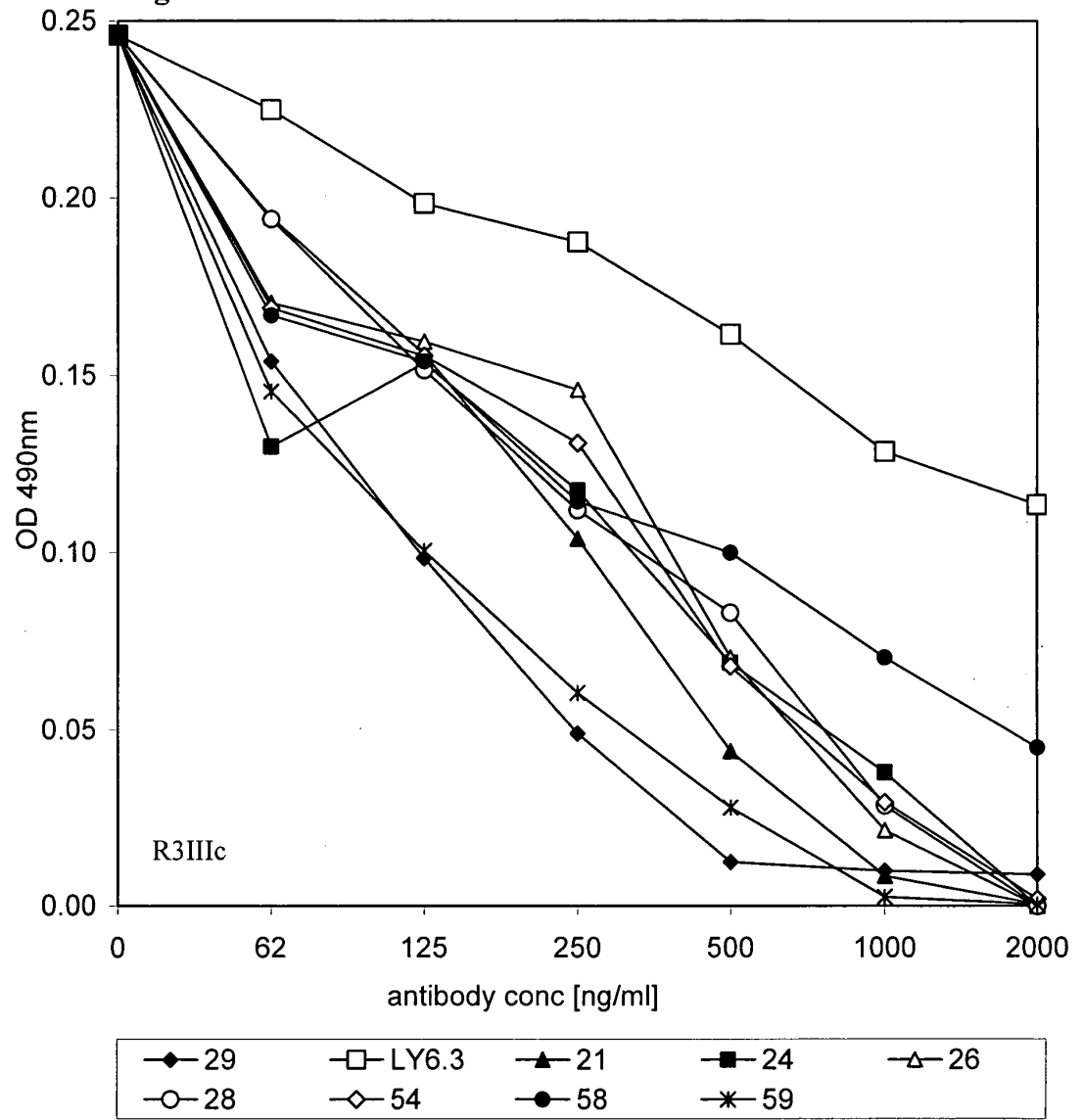


Figure 14

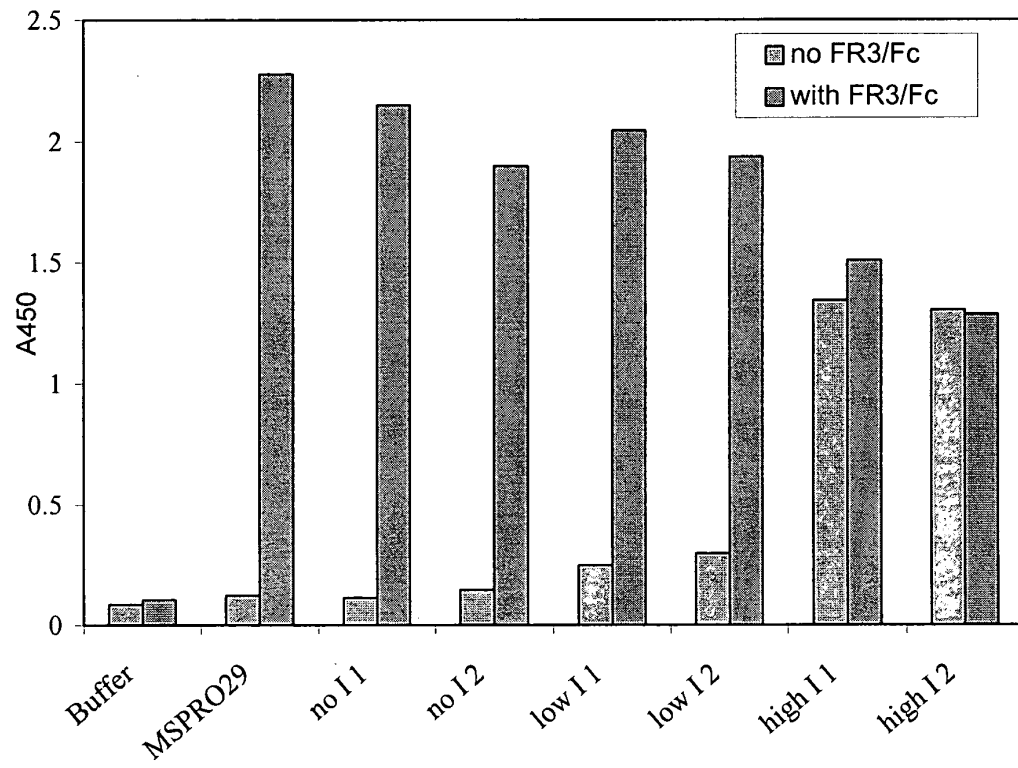


Figure 15

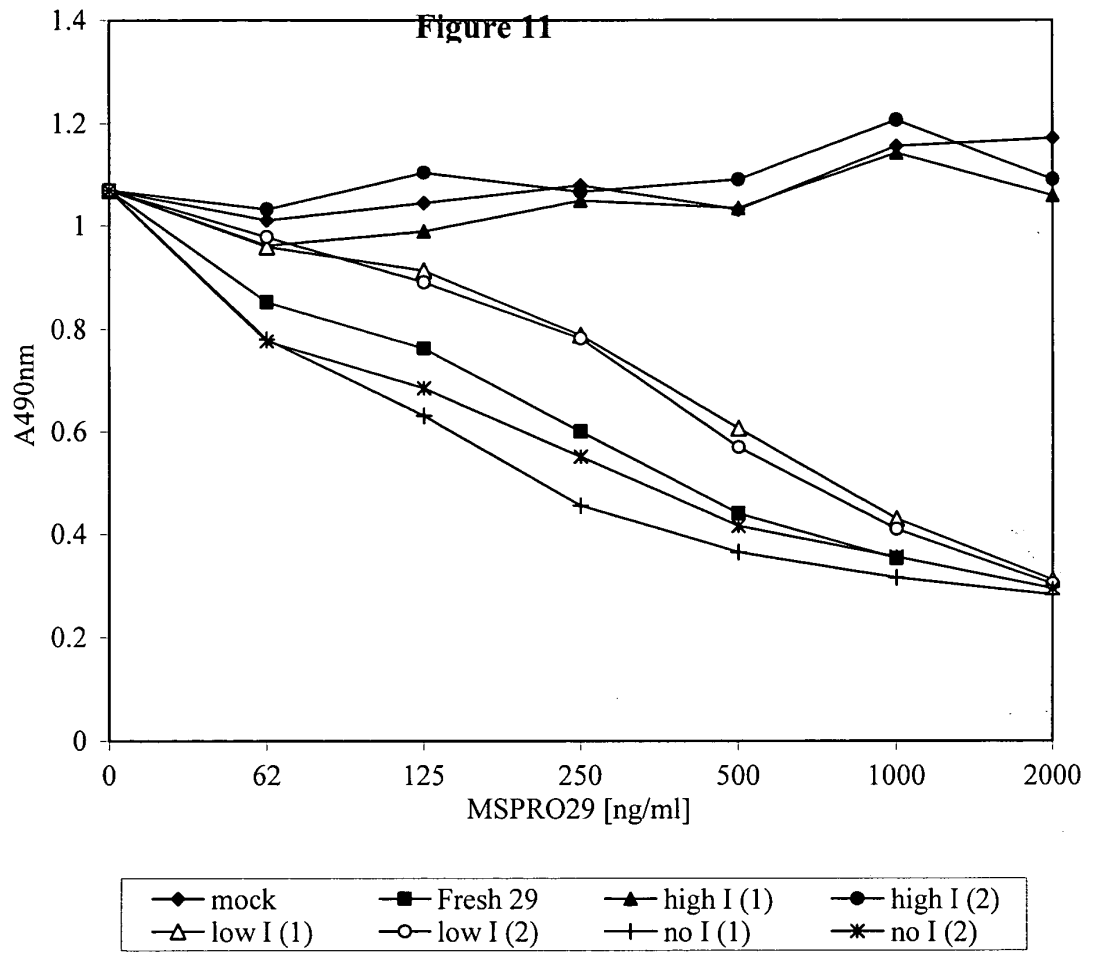


Fig. 16A



Fig. 16B

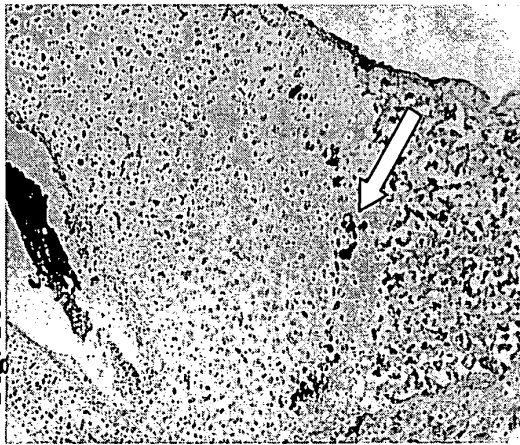
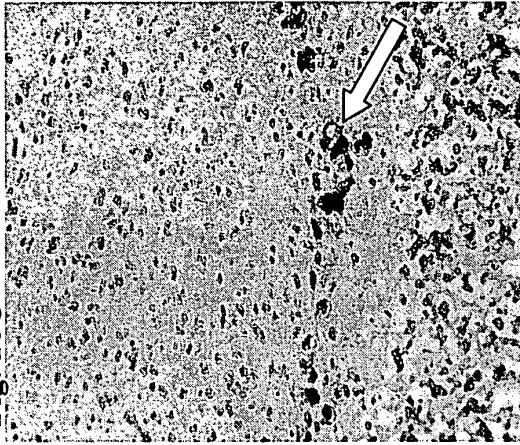


Fig. 16C



29

Fig. 16D



Fig. 16E

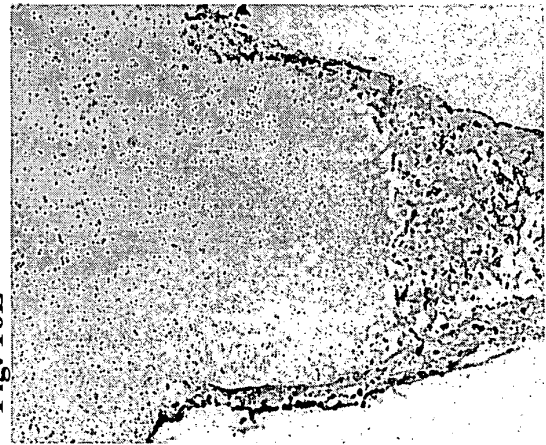
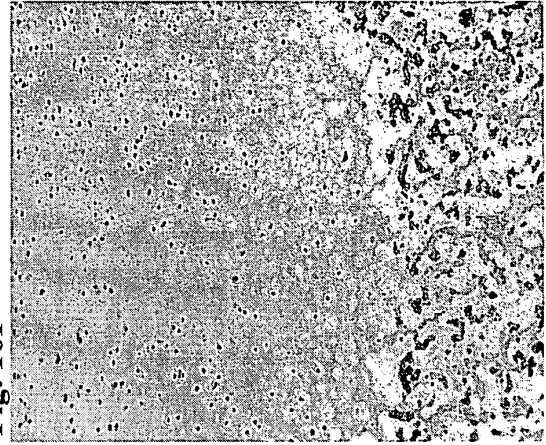
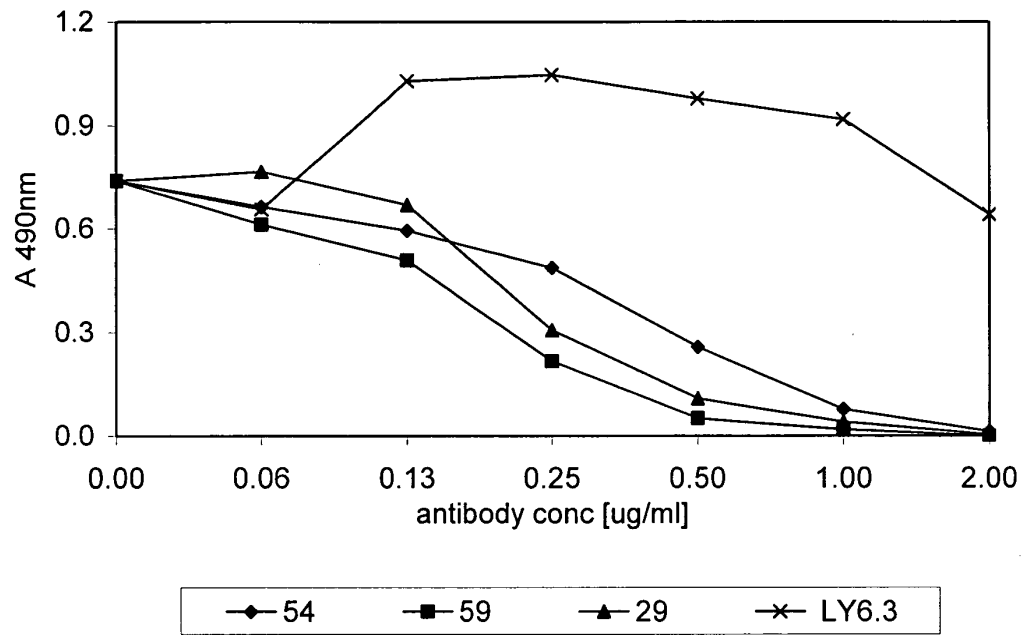


Fig. 16F

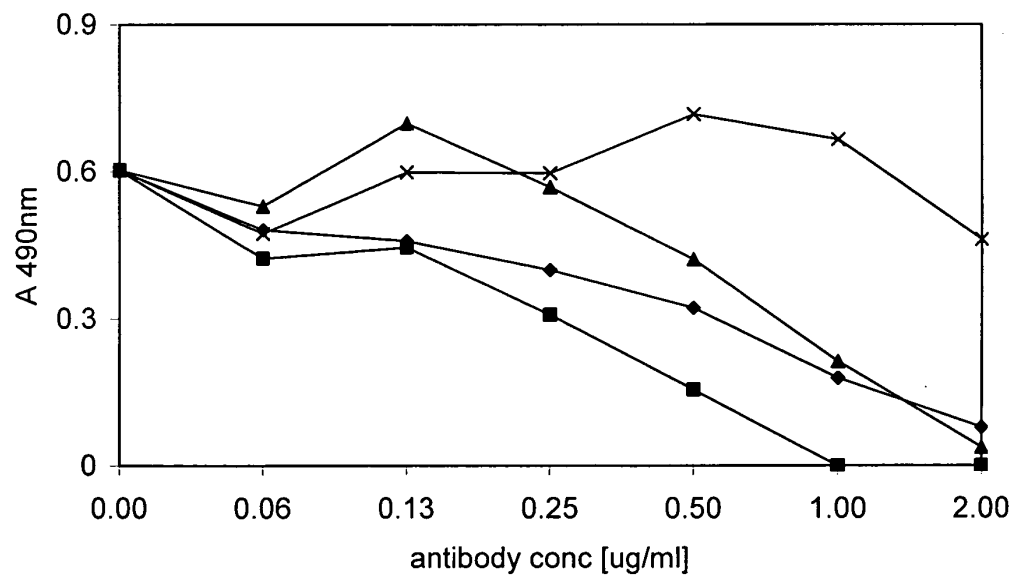


Ly6.3

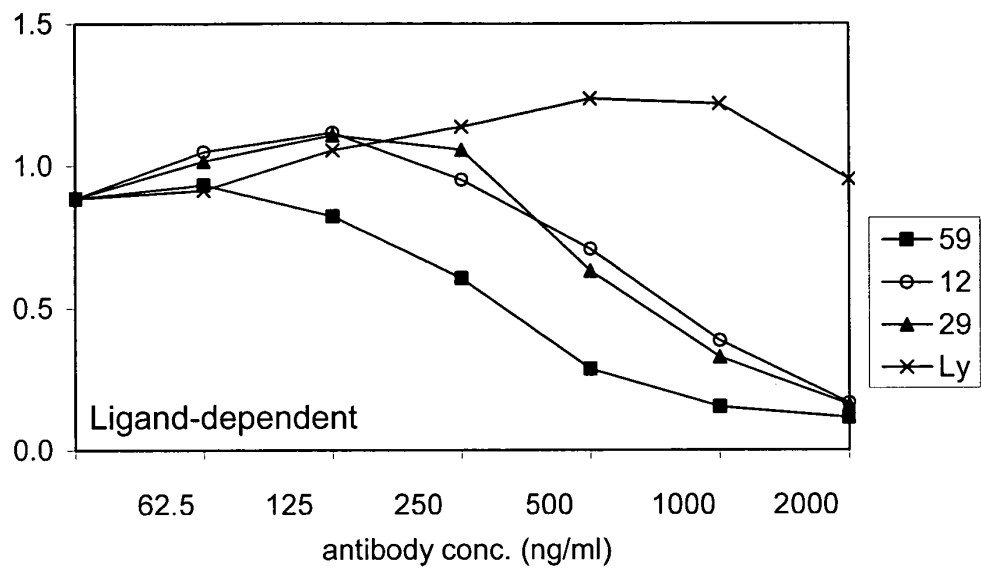
**Figure 17A**



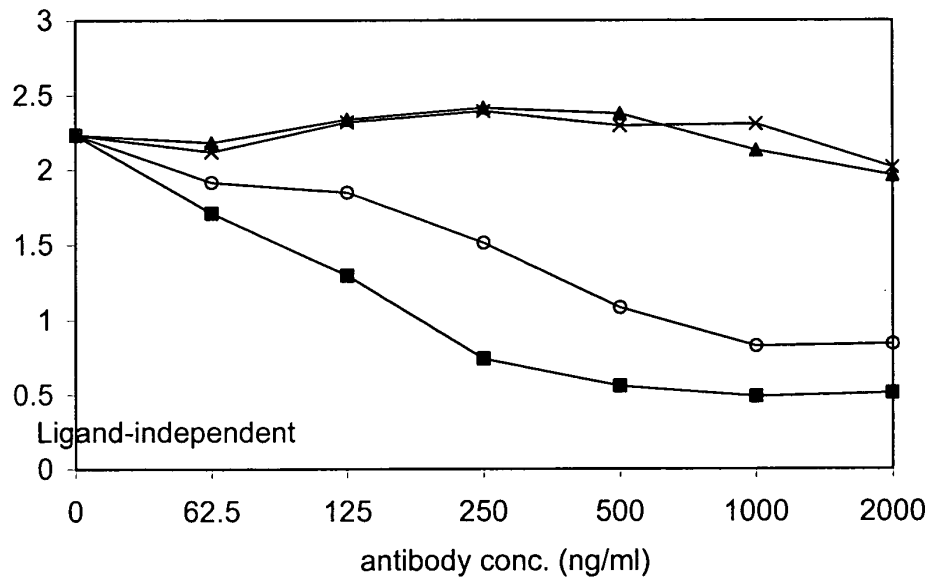
**Figure 17B**



**Figure 18A**



**Figure 18B**



**Figure 19**

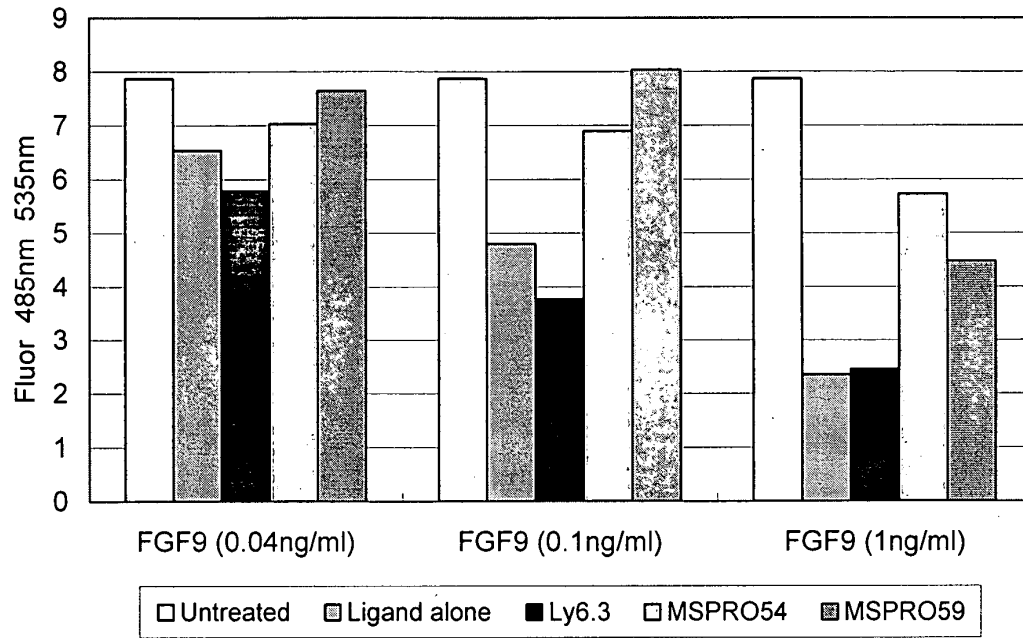
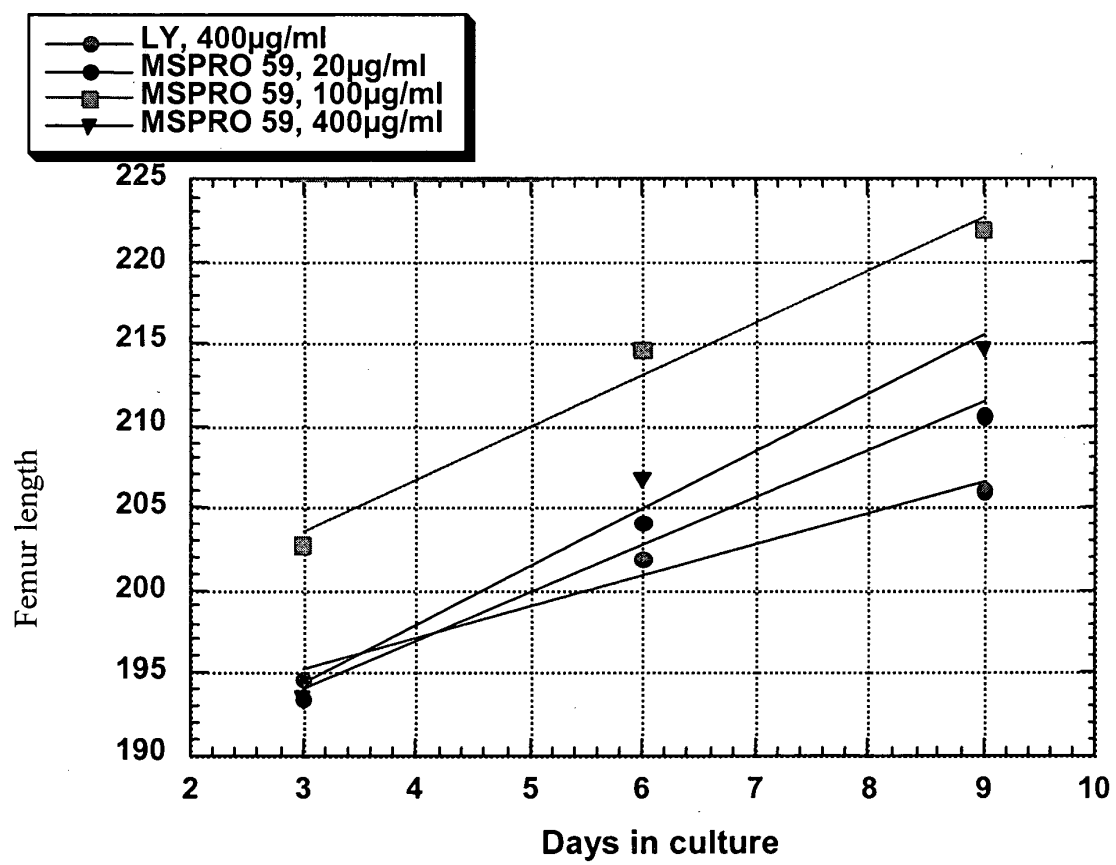
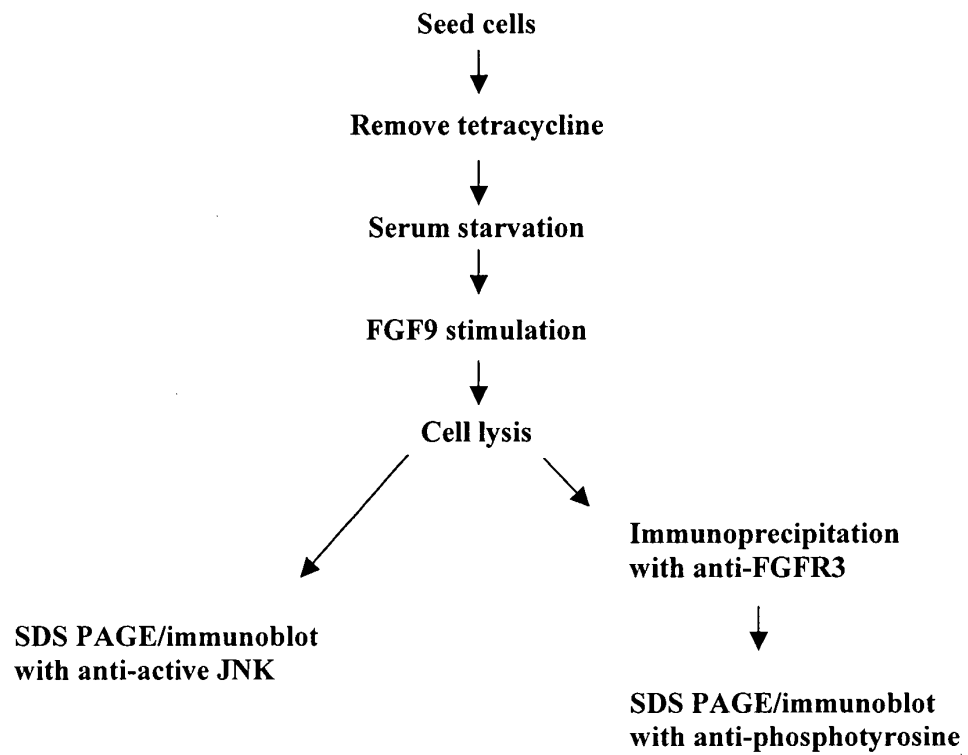


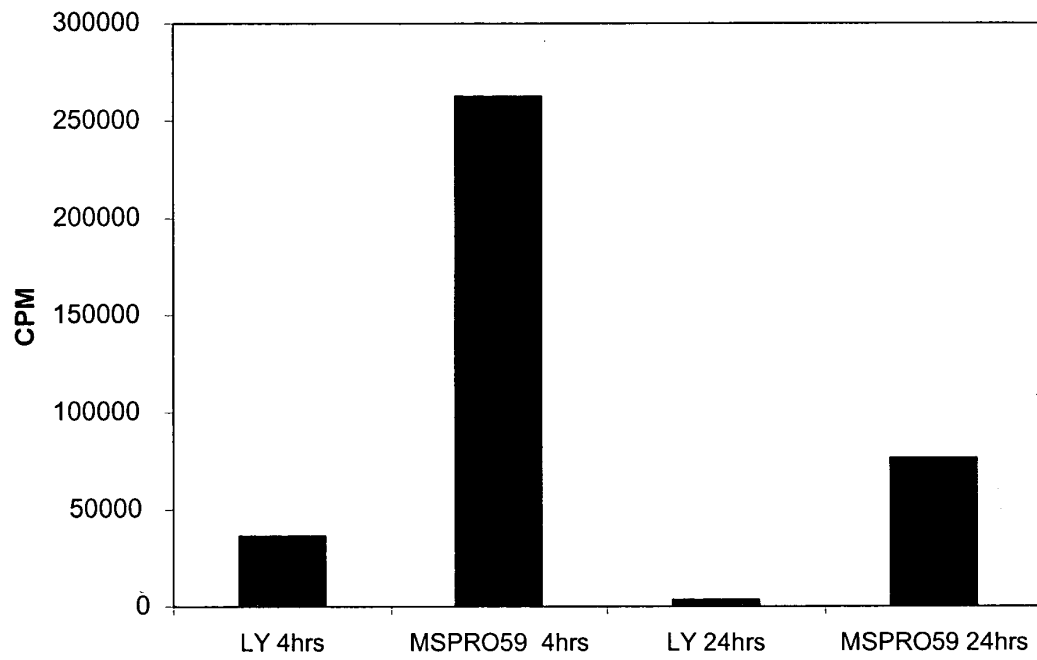
Figure 20



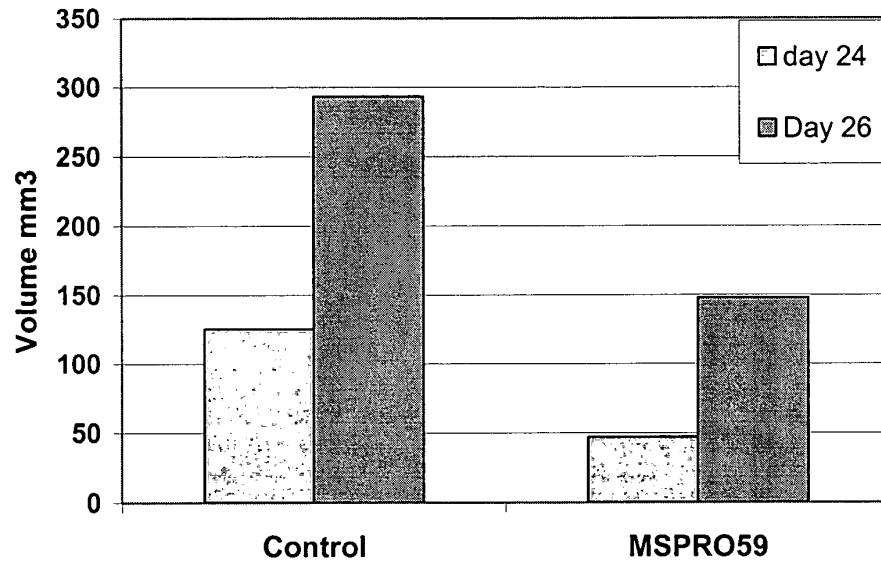
**Figure 21**



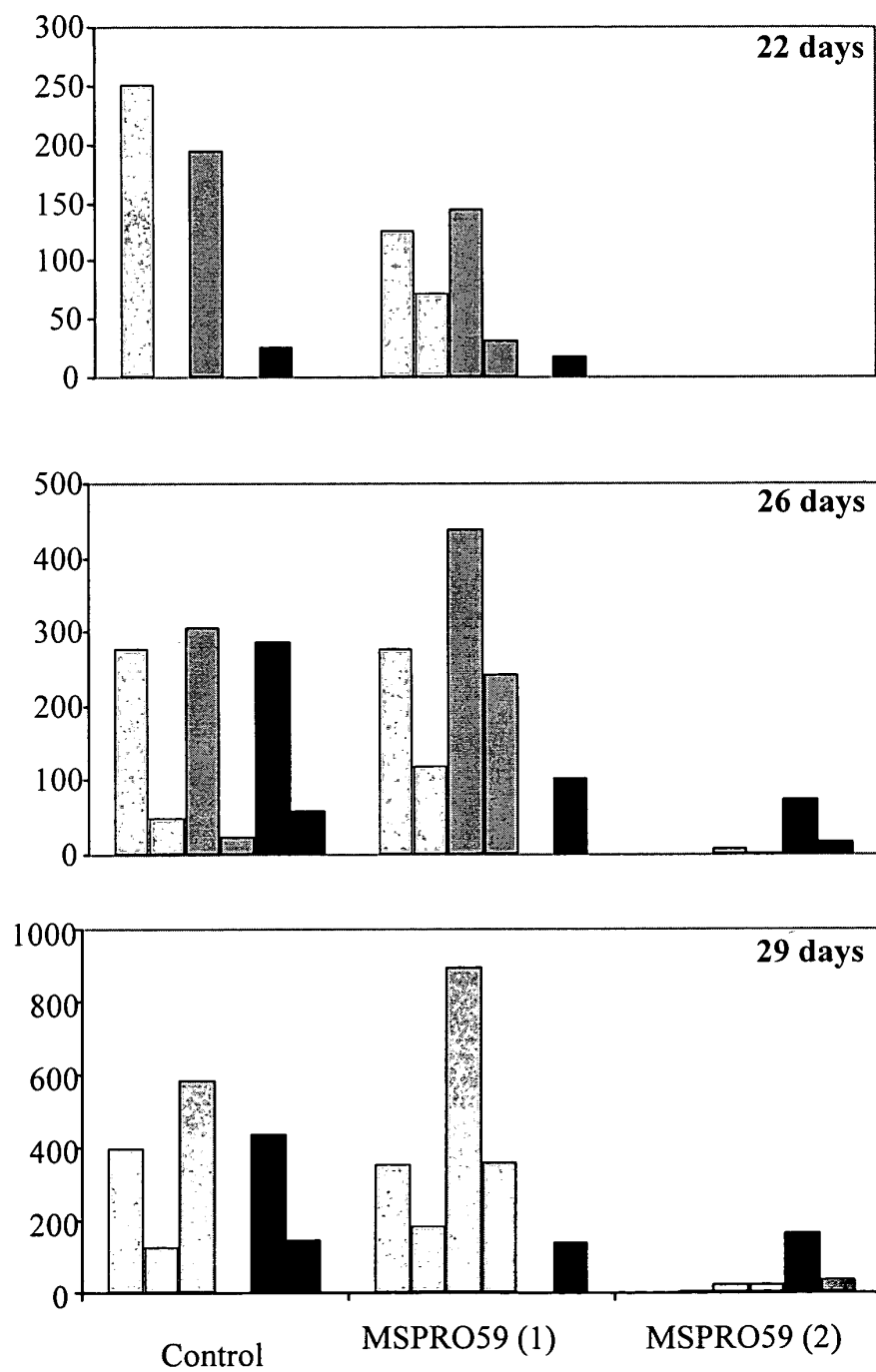
**Figure 22**



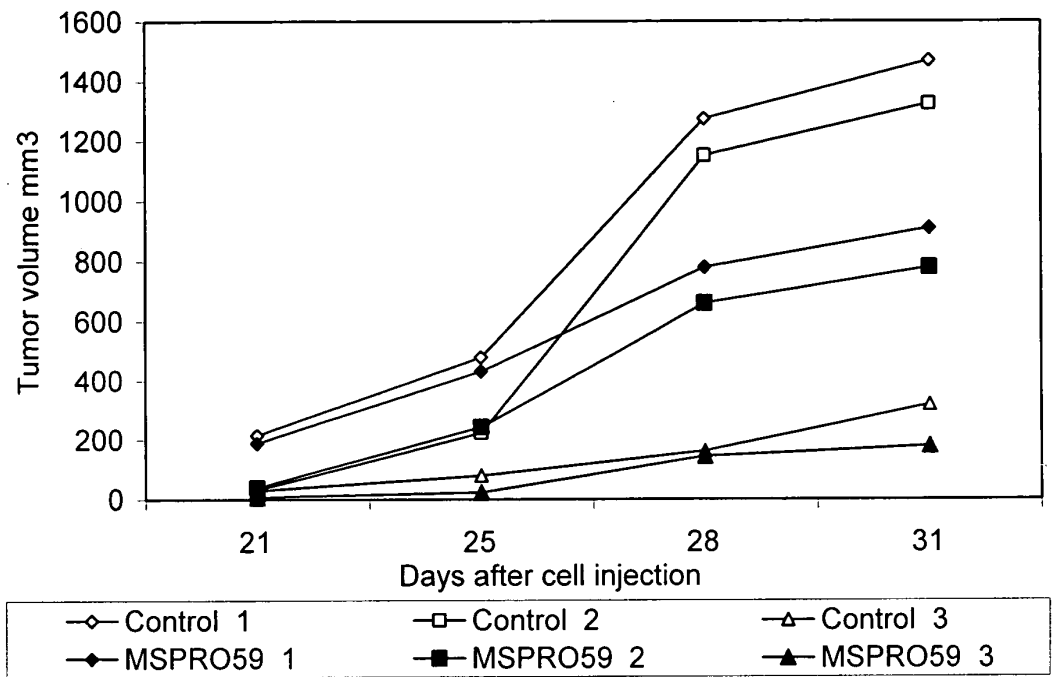
**Figure 23**



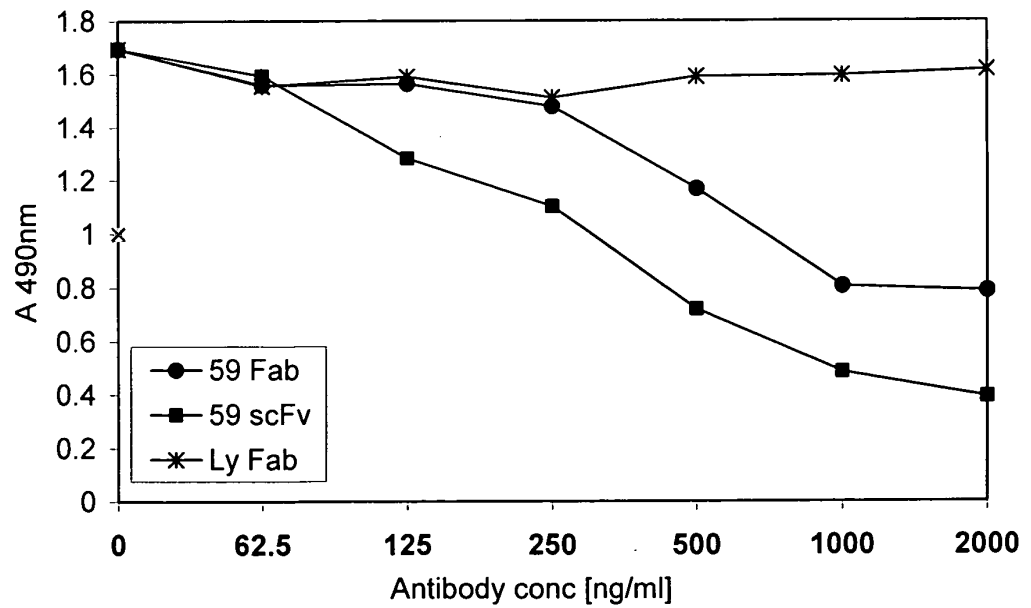
**Figure 24**



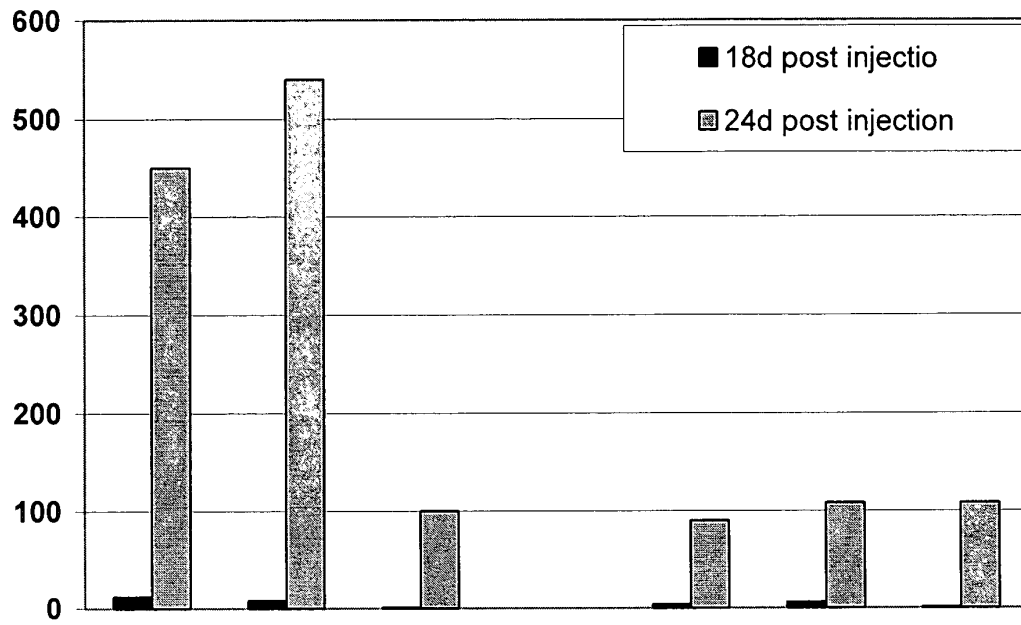
**Figure 25A**



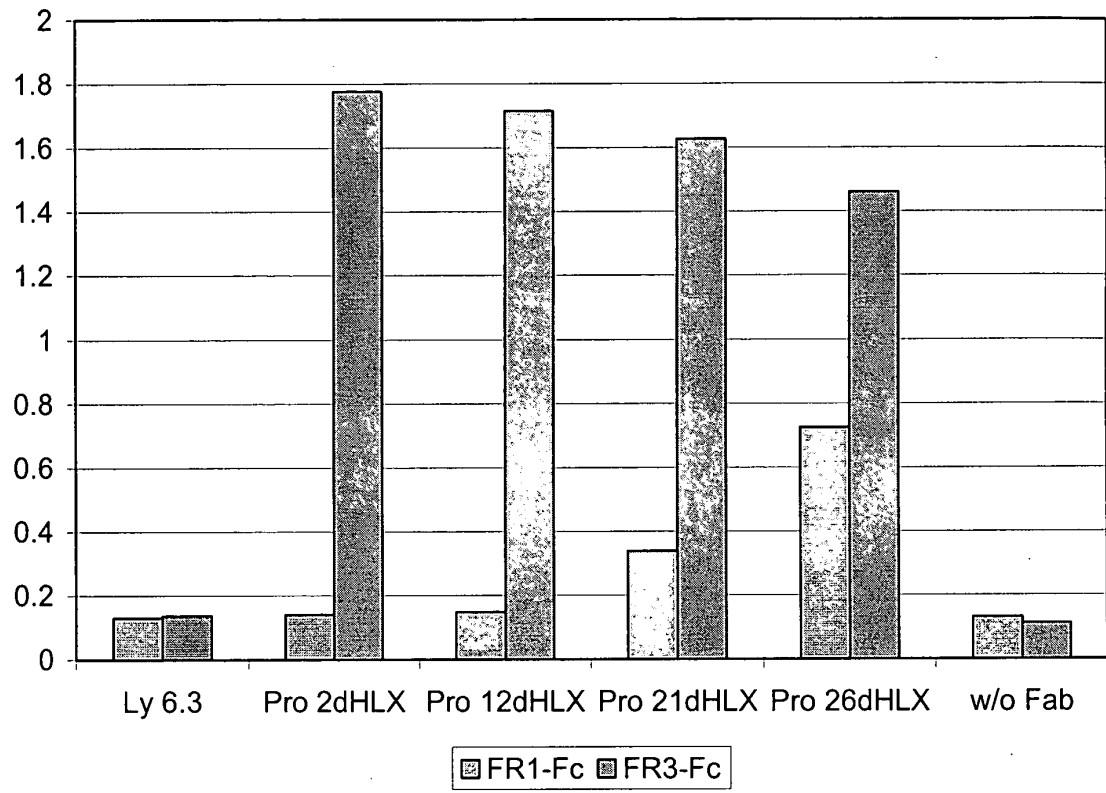
**Figure 25B**



**Figure 26**



**Figure 27**



**Figure 28**

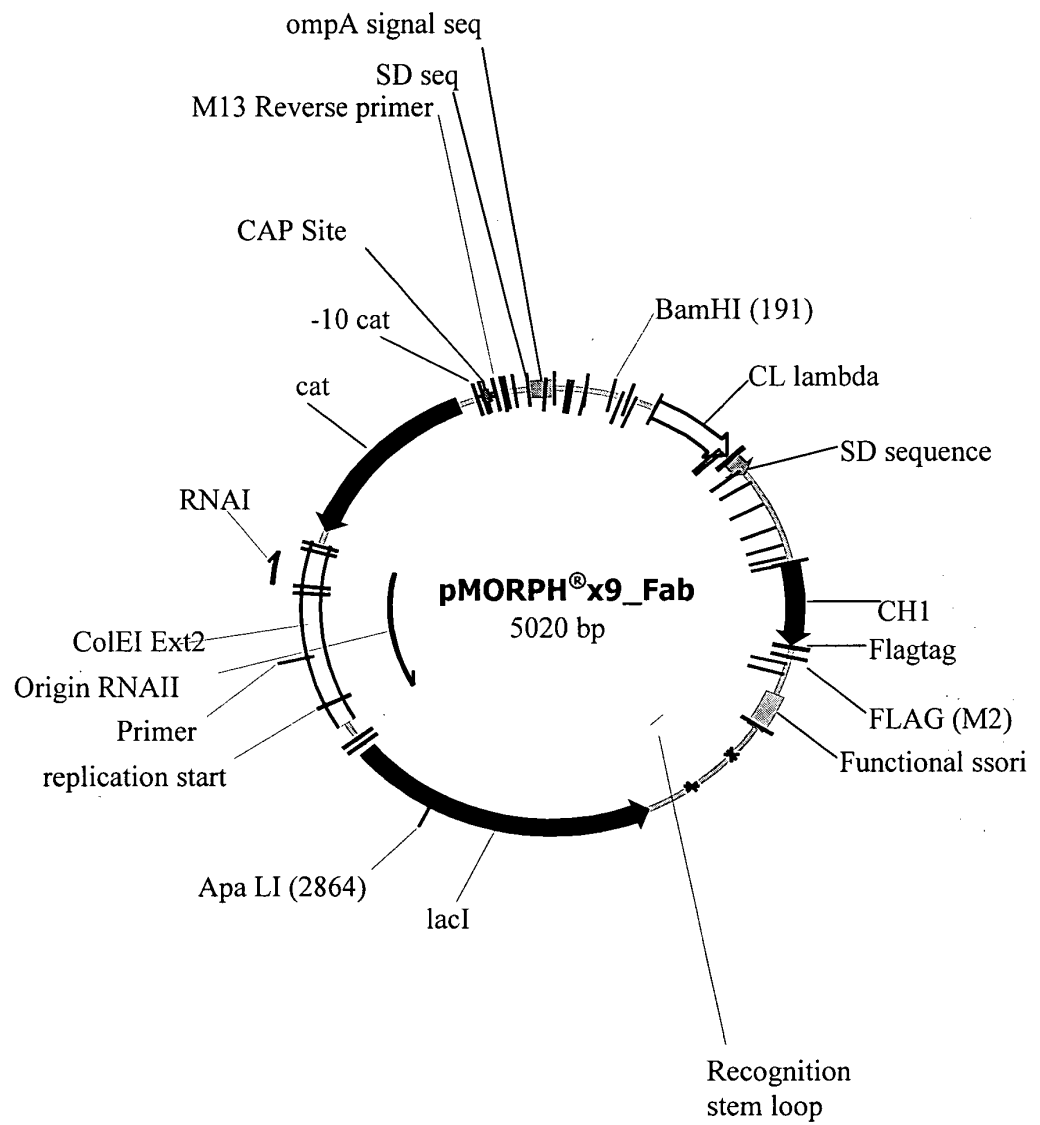


Figure 29

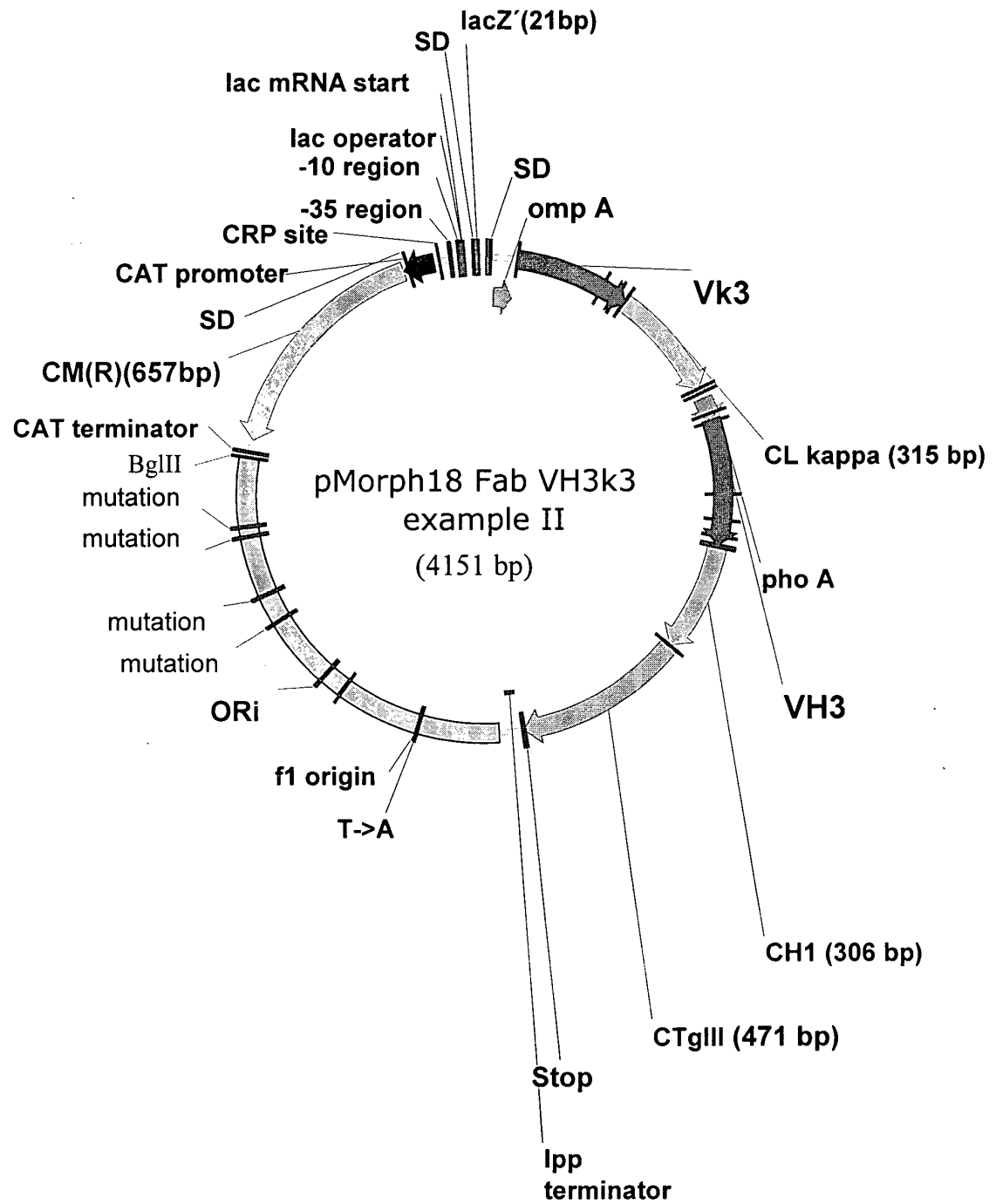


Figure 30

VL	Position	Framework 1																		
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	
		EcoRV																		
		GAT	ATC	CAG	ATG	ACC	CAG	AGC	CCG	TCT	AGC	CTG	AGC	GCG	AGC	GTG	GGT	GAT	CGT	
	VLk1 (SEQ ID NO: 61)	GAT	ATC	CAG	ATG	ACC	CAG	AGC	CCG	TCT	AGC	CTG	AGC	GCG	AGC	GTG	GGT	GAT	CGT	
	MSPro28 (SEQ ID NO: 62)	GAT	ATC	CAG	ATG	ACC	CAG	AGC	CCG	TCT	AGC	CTG	AGC	GCG	AGC	GTG	GGT	GAT	CGT	
	VLk3 (SEQ ID NO: 63)	GAT	ATC	CTG	CTG	ACC	CAG	AGC	CCG	GCG	ACC	CTG	AGC	CTG	TCT	CCG	GGC	GAA	CGT	
	MSPro24 (SEQ ID NO: 64)	GAT	ATC	CTG	CTG	ACC	CAG	AGC	CCG	GCG	ACC	CTG	AGC	CTG	TCT	CCG	GGC	GAA	CGT	
	MSPro29 (SEQ ID NO: 65)	GAT	ATC	CTG	CTG	ACC	CAG	AGC	CCG	GCG	ACC	CTG	AGC	CTG	TCT	CCG	GGC	GAA	CGT	
	VLk4 (SEQ ID NO: 66)	GAT	ATC	CTG	ATG	ACC	CAG	AGC	CCG	GAT	AGC	CTG	GCG	GTG	AGC	CTG	GGC	GAA	CGT	
	MSPro21 (SEQ ID NO: 67)	GAT	ATC	CTG	ATG	ACC	CAG	AGC	CCG	GAT	AGC	CTG	GCG	GTG	AGC	CTG	GGC	GAA	CGT	
	VL12 (SEQ ID NO: 68)	GAT	ATC	GCA	CTG	ACC	CAG	CCA	GCT		TCA	GTG	AGC	GGC	TCA	CCA	GGT	CAG	AGC	
	MSPro55 (SEQ ID NO: 69)	GAT	ATC	GCA	CTG	ACC	CAG	CCA	GCT		TCA	GTG	AGC	GGC	TCA	CCA	GGT	CAG	AGC	
	MSPro11 (SEQ ID NO: 70)	GAT	ATC	GCA	CTG	ACC	CAG	CCA	GCT		TCA	GTG	AGC	GGC	TCA	CCA	GGT	CAG	AGC	
	MSPro26 (SEQ ID NO: 71)	GAT	ATC	GCA	CTG	ACC	CAG	CCA	GCT		TCA	GTG	AGC	GGC	TCA	CCA	GGT	CAG	AGC	
	VL13 (SEQ ID NO: 72)	GAT	ATC	GAA	CTG	ACC	CAG	CCG	CCT		TCA	GTG	AGC	GTT	GCA	CCA	GGT	CAG	ACC	
	MSPro54 (SEQ ID NO: 73)	GAT	ATC	GAA	CTG	ACC	CAG	CCG	CCT		TCA	GTG	AGC	GTT	GCA	CCA	GGT	CAG	ACC	
	MSPro2 (SEQ ID NO: 74)	GAT	ATC	GAA	CTG	ACC	CAG	CCG	CCT		TCA	GTG	AGC	GTT	GCA	CCA	GGT	CAG	ACC	
	MSPro12 (SEQ ID NO: 75)	GAT	ATC	GAA	CTG	ACC	CAG	CCG	CCT		TCA	GTG	AGC	GTT	GCA	CCA	GGT	CAG	ACC	
	MSPro59 (SEQ ID NO: 76)	GAT	ATC	GAA	CTG	ACC	CAG	CCG	CCT		TCA	GTG	AGC	GTT	GCA	CCA	GGT	CAG	ACC	
VH		Framework 1																		
	Position	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	
		MfeI																		
	GAA/CAG	GTG	CAA	TTG	GTT	CAG	TCT	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	AGC	AGC	GTG		
	VH1A (SEQ ID NO: 77)	CAG	GTG	CAA	TTG	GTT	CAG	TCT	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	AGC	AGC	GTG	
	MSPro21 (SEQ ID NO: 78)	CAG	GTG	CAA	TTG	GTT	CAG	TCT	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	AGC	AGC	GTG	
	MSPro24 (SEQ ID NO: 79)	CAG	GTG	CAA	TTG	GTT	CAG	TCT	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	AGC	AGC	GTG	
	MSPro28 (SEQ ID NO: 80)	CAG	GTG	CAA	TTG	GTT	CAG	TCT	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	AGC	AGC	GTG	
	VH1B (SEQ ID NO: 81)	GAA/CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro54 (SEQ ID NO: 82)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro55 (SEQ ID NO: 83)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro2 (SEQ ID NO: 84)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro11 (SEQ ID NO: 85)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro26 (SEQ ID NO: 86)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	MSPro29 (SEQ ID NO: 87)	CAG	GTG	CAA	TTG	GTT	CAG	AGC	GGC	GCG	GAA	GTG	AAA	AAA	CCG	GGC	GCG	AGC	GTG	
	VH2 (SEQ ID NO: 88)	GAA/CAG	GTG	CAA	TTG	AAA	GAA	AGC	GGC	CCG	GCC	CTG	GTG	AAA	CCG	ACC	CAA	ACC	CTG	
	MSPro12 (SEQ ID NO: 89)	CAG	GTG	CAA	TTG	AAA	GAA	AGC	GGC	CCG	GCC	CTG	GTG	AAA	CCG	ACC	CAA	ACC	CTG	
	VH6 (SEQ ID NO: 90)	GAA/CAG	GTG	CAA	TTG	CAA	CAG	TCT	GGT	CCG	GGC	CTG	GTG	AAA	CCG	AGC	CAA	ACC	CTG	
	MSPro59 (SEQ ID NO: 91)	CAG	GTG	CAA	TTG	CAA	CAG	TCT	GGT	CCG	GGC	CTG	GTG	AAA	CCG	AGC	CAA	ACC	CTG	

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## Framework 2

[illegible]

Figure 30 cont.

Framework 2										CDR 2										Framework 3									
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SexAI										AseI										SmaDI									
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Framework 2										CDR 2										Framework 3									
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XhoI																													
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CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
CAG	GGT	CTC	GAG	TGG	ATG	GGC	TGG	ATT	AAC	CCG	-	-	AAT	AGC	GGC	GGC	ACG	AAC	TAC	GCG	CAG	AAG	TTT	CAG	GGC				
AAA	GCC	CTC	GAG	TGG	CTG	GCT	CTG	ATT	GAT	-	-	-	TGG	GAT	GAT	GAT	AAG	TAT	TAT	AGC	ACC	AGC	CTG	AAA	ACG				
AAA	GCC	CTC	GAG	TGG	CTG	GCT	CTG	ATT	GAT	-	-	-	TGG	GAT	GAT	GAT	AAG	TAT	TAT	AGC	ACC	AGC	CTG	AAA	ACG				
CGT	GGC	CTC	GAG	TGG	CTG	GGC	CGT	ACC	TAT	TAT	CGT	-	-	AGC	AAA	TGG	TAT	AAC	GAT	TAT	CGC	GTG	AGC	GTG	AAA	ACG			
CGT	GGC	CTC	GAG	TGG	CTG	GGC	CGT	ACC	TAT	TAT	CGT	-	-	AGC	AAA	TGG	TAT	AAC	GAT	TAT	CGC	GTG	AGC	GTG	AAA	ACG			

**Figure 30 cont.**

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Figure 30 cont.

CDR3										Framework 4									
J	k	1	1	2	2	3	4	5	6	7	8	9	0	1	2	3			
x	x	x	x	GAT	x	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	BlpI		
CCT	TTT	TCT	GAT	GTT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
TAT	ACT	TTT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
TAT	CTT	TTT	GAT	CTT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
x	x	x	x	GAT	x	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	StyI		
CCT	CAT	TTT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
GTT	CTT	TTT	GAT	CAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
TAT	GAG	TTT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
GGT	TTT	ATT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
GGT	TAT	TTT	GAT	AAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
TAT	TAT	TTT	GAT	ATT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
x	x	x	x	GAT	x	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA			
TAT	ATG	TTT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			
x	x	x	x	GAT	x	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA			
CCT	GAT	TTT	GAT	TAT	TGG	GSC	CAA	GSC	ACC	CTG	GTG	ACG	GTT	AGC	TCA	GC			